

## New Machine for Molding Cast Iron

*Metallurgy*

NO longer must temporary sand forms, which are destroyed as soon as molten metal hardens in them, be made for every object cast.

Small articles of low melting point metals have been die cast for years. Now there is in use in Europe a machine which forms articles from cast iron, a high melting point metal, continuously in the same mold.

"Machines of this type will undoubtedly be installed in this country in the near future," Charles Pack, New York consulting engineer, told the American Society for Testing Materials recently.

Pressing flat sheets of steel into automobile bodies and other shapes is becoming more and more an accurate science, it was revealed by W. H. Graves, a metallurgist of Detroit.

For a long time the only way to find

how deep a sheet should be stamped was to try it in the press and this method of trial and error was wasteful and inaccurate, Mr. Graves said. Now simple tests show in advance not only how far a sheet can be bulged out of shape before breaking, but also how much force will be required.

Bearings in which the wheels of industry turn with least effort are made of a hard and a soft metal.

"It is now generally accepted that a single constituent metal is not well suited for bearing purposes," Prof. Clair Upthegrove, of the University of Michigan, said.

The hard metal supports the load and resists wear. The soft one wears away and forms slight depressions in which small amounts of the lubricant may be retained, Prof. Upthegrove explained.

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## Parrot Fever Work to Be Moved

*Medicine*

WHEN the U. S. Public Health Service's studies on parrot fever are resumed, it will be at one of the government's quarantine stations, probably either the one on Craney Island near Norfolk, the one on Reedy Island in the Delaware river near Lewes, or the one on Swinburne Island at New York City. A fourth location, an island quarantine station at Portland, Maine, is also under consideration but is not favored so much as the other three, because of the severe winters there.

The selection of an island quarantine station has resulted from recommendations of the special board appointed by Surgeon General Hugh S. Cumming to investigate the parrot fever situation at the Hygienic Laboratory, where eleven persons contracted the disease while the studies were going on.

The board reported that the present facilities at the Hygienic Laboratory are totally inadequate, and recommended that a new building be constructed. Pending this construction, thorough overhauling of the present structure, including painting, cleaning, etc., was advised.

The board further recommended that further investigations on parrot fever or similar diseases be temporarily carried out at an isolated place. The maritime quarantine stations, particularly those located on islands, were immediately considered.

These have laboratory and hospital accommodations for handling cases of

infectious disease coming in on ships. These facilities can readily be enlarged to take in the parrot fever investigations, it was explained. The station at Reedy Island has the most convenient arrangements for quartering the investigators and their families, and the climate is not too severe. It is isolated, but not inaccessible at all. However, no decision has yet been made as to which station will be chosen for this work.

Neither have the men to carry it on been selected, although Dr. Charles Armstrong, who was conducting the parrot fever studies before he became ill, and Dr. L. F. Badger, who has collected blood from recovered parrot fever patients for convalescent serum, have been mentioned.

Dr. Armstrong is entirely well but still rather weak, as he has given blood several times for the serum with which other parrot fever patients are treated. It is expected that the parrot fever studies will be resumed within a week or so, as soon as the new location can be made ready.

No new cases have been reported in the last three days, and all the patients are doing well except the two negroes, Fred Blackwell and C. Murphy, who are still quite sick.

Of the entire force of the Hygienic Laboratory, numbering about 120, ten have contracted the disease, and one died of it. In only two cases were the victims working directly on the disease.

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## Low Voltage Dangerous

ALTERNATING current is more dangerous at low voltages than at high voltages and direct current is more dangerous at high than at low voltages. This is the curious conclusion reached by Prof. W. B. Kouwenhoven, an electrical engineer, and Prof. Orthello R. Langworthy, associate in neurology, following extensive studies on rats in the laboratories of Johns Hopkins University.

The two scientists insist that the results of their tests on 286 rats cannot be applied directly to men or other animals. But the facts they learned tie in well with existing knowledge of the effect of electricity on human beings. Statistics show that the annual death rate from electric shock is nine-tenths per 100,000 and that one-third of these fatal accidents occur on low voltage circuits.

"On high voltage circuits the victim is often thrown away from the conductors by the severe contraction of the muscles, but on low voltage circuits it is often impossible to let go," a recent report to the American Institute of Electrical Engineers says. "No authentic record has been found, however, of a death on a 110-volt direct circuit."

"If the skin is wet, 110-volt alternating-current house circuits are dangerous. The sensation produced by an alternating current of 15 to 20 thousandths of an ampere is extremely painful and a current of 100 milliamperes may cause death," the report says.

*Electricity*

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## Magnetic Hardening

Metals can be superhardened by magnetic treatment as well as by heat treatment, E. G. Herbert reports before the Iron and Steel Institute.

Magnetic hardening is accomplished by repeatedly changing the polarity of the steel, Mr. Herbert explains. A specimen so treated could not be hardened more by low temperature annealing, he says.

Whether the magnetic treatment is apt to become of commercial value is not indicated. It is evident that both magnetism and heating doubtless produced the same atomic rearrangement. This phenomenon may lead to the finding of additional information about the structure of magnetic metals.

*Metallurgy*

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